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IS 1961 (1968): Glass tableware [CHD 10: Glassware]



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Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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IS : 1961 - 1968
(Reaffirmed 2006)

Indian Standard
SPECIFICATION FOR
GLASS TABLEWARE
(First Revision)

Second Reprint SEPTEMBER 1992

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

AMENDMENT NO. 3 JULY 2007
TO
IS 1961 : 1968 SPECIFICATION FOR
GLASS TABLEWARE

(First Revision)

(Page 4, clause 3.5) — Substitute the following for the existing clause:

'3.5 Limit of Alkalinity — The tableware, when graded according to the method prescribed in IS 2303 (Part 1/Sec 1) : 1994† shall conform to Class HGB 4 of the glass.'

(Page 4, footnote marked †) — Substitute the following for the existing:

†Grading glass for alkalinity Part 1 Hydrolytic resistance, Section 1 Hydrolytic resistance of glass grains at 98°C - Method pf test and classification (*first revision*)'

(Page 5, clause 4.1.1) — Substitute the following for the existing clause:

'4.1.1 BIS Certification Mark

The tableware may also be marked with the Standard Mark.

4.1.1.1 The use of the Standard Mark is governed by the provisions of *Bureau of Indian Standards Act*, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.'

(CHD 10)

AMENDMENT NO. 2 JULY 1991
TO
IS 1961:1968 SPECIFICATION FOR GLASS
TABLEWARE

(First Revision)

Through this amendment, the scope of the standard and the glossary of the term 'glass tableware' have been elaborated to remove any ambiguity.

(Page 3, Clause 1.1, Line 2) - Add the following sentences at the end:

'This includes tumblers, plates, cups, saucers, mugs, jugs, stemware, bowls, casseroles, dishes with or without cover. They can also be used for preparing food.'

(Page 4, Clause 2.1, Line 2 and 3) - Substitute the following for the existing definition of 'Glass Tableware':

'Glass Tableware - Glassware used on the table for serving, eating or drinking.'

(CHD 010)

AMENDMENT NO. 1 MARCH 1972
TO
IS : 1961-1968 SPECIFICATION FOR
GLASS TABLEWARE
(First Revision)

With a view to describing the water sprayer used for testing thermal shock resistance of flat tableware in detail, the Glassware Sectional Committee, responsible for the preparation of the standard, decided to issue this amendment.

Alteration

(Page 6, clause A-1.1.2) — Substitute the following for the existing clause:

A-1.1.2 Water Sprayer — The sprayer shall be of the size and shape as shown in Fig. 1. The spraying face shall have 30 to 35 holes of 0.5 mm diameter. These holes shall be at a distance of about 10 mm from one another. Water shall be maintained at a pressure of 1 kgf/cm² by means of a valve and the spraying surface shall be kept at a distance of 30 cm from the ware under test.

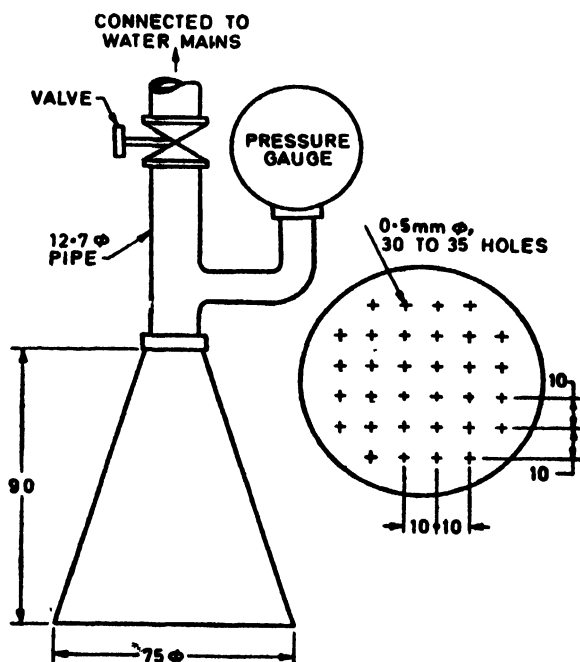


FIG. 1 WATER SPRAYER

(CDC 10)

Indian Standard

SPECIFICATION FOR GLASS TABLEWARE

(First Revision)

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IS : 1961 - 1968

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Indian Standard

SPECIFICATION FOR GLASS TABLEWARE

(First Revision)

0. FOREWORD

0.1 This Indian Standard (First Revision) was adopted by the Indian Standards Institution on 20 February 1968, after the draft finalized by the Glassware Sectional Committee had been approved by the Chemical Division Council.

0.2 This standard was first published in 1961, and covered only tumblers and jugs. Since the term tableware includes other items like butter dishes, cups and saucers, stemware for liquors and soft drinks in addition to tumblers and jugs, the Sectional Committee, responsible for the preparation of this standard, decided to revise it to include all other items of tableware. An additional requirement of alkalinity of the glass has been included and reference has been made to IS : 2303-1963* for its method of determination.

0.3 This standard contains clause **4.2** which provides for agreement between the purchaser and the supplier.

0.4 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-1960†. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard prescribes the requirements and the methods of sampling and test for glass tableware.

2. TERMINOLOGY

2.1 For the purpose of this standard, the definitions given in IS : 1382-1961‡

*Method of grading glass for alkalinity.

†Rules for rounding off numerical values (*revised*).

‡Glossary of terms relating to glass industry.

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in addition to the following, shall apply:

Glass Tableware—This includes items like tumblers, jugs, butter dishes, cups, saucers and stemware for liquors and soft drink.

3. REQUIREMENTS

3.1 Quality of Glass Tableware

3.1.1 The tableware shall be as free as possible from strain and visible defects. It shall be as far as possible free from any colour as seen transversely through the body, except in the case of coloured or decorated articles. In the case of the latter, the depth of the colour and its distribution through the body and decoration shall be subject to agreement between the purchaser and the supplier.

3.2 Workmanship

3.2.1 The tableware shall be well-formed and when placed on a horizontal plane shall rest evenly and shall not rock.

3.2.2 The wall thickness of the tableware shall be the same throughout the circumference at any given level with tolerances of ± 33 percent for thickness up to 2 mm, ± 25 percent for thickness above 2 mm and up to 3 mm and ± 20 percent for thickness above 3 mm at the said level excluding embossing, if any.

3.2.3 The rim of the tableware shall be uniformly smooth and evenly finished.

3.2.4 In case of tableware provided with handles, the handles shall be well fused with the main body of the glass and shall be facing the spout, if provided. The centre of the top and the bottom parts of the handles shall be in the same vertical plane.

3.2.5 In case of tableware with spout, the spout shall be well shaped and shall be such that it is possible to pour from it in a regular stream without the liquid clinging to the outer surface.

3.3 Tolerance on Nominal Capacity—The tolerance on the nominal capacity shall be ± 5 percent in the case of tumblers and ± 10 percent in case of jugs. The tolerance shall be determined by filling the tumbler or the jug, as the case may be, to the brim and measuring the volume.

3.4 Thermal Shock Test—The tableware shall satisfy the requirement of the test prescribed in Appendix A.

3.5 Alkalinity—The tableware, when graded according to the method prescribed in IS : 2303-1963* shall conform to Type 5 of the glass.

*Method of grading glass for alkalinity.

4. MARKING AND PACKING

4.1 Marking — Each article shall be legibly and indelibly marked either at the bottom or near the rim or on a label with the following information:

- a) Manufacturer's name or his recognized trade-mark, if any; and
- b) Nominal capacity, where applicable.

4.1.1 The tableware may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI Mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

4.2 Facking — The tableware shall be packed as agreed to between the purchaser and the supplier.

5. SAMPLING

5.1 Representative samples of the material shall be drawn and adjudged as prescribed in Appendix B.

APPENDIX A

(Clause 3.4)

THERMAL SHOCK TEST

A-0. OUTLINE OF THE METHOD

A-0.1 Tableware is subjected to a sudden change of temperature and examined for any cracks or damage.

A-1. APPARATUS

A-1.1 For Flat Tableware

A-1.1.1 Electrical Air-Oven — capable of being heated through a temperature range of 35° to 120°C; provided with a thermometer, an air-stirrer

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or circulator to ensure temperature uniformity and also a thermostat capable of maintaining the temperature constant to ± 1 deg up to 100°C .

A-1.1.2 *Water Sprayer* — suitable for spraying cold water on the outside of the flatware.

A-1.2 For Tableware Other than Flatware

A-1.2.1 *Hot Water-Bath* — provided with suitable means of heating, a stirrer to ensure uniform temperature through the bath, a thermometer capable of being read to an accuracy of ± 1 deg and a thermostat to control the temperature of water to within $70^{\circ} \pm 1^{\circ}\text{C}$.

A-1.2.2 *Cold Water-Bath* — provided with a stirrer to ensure uniformity of temperature throughout the bath and a thermometer capable of being read to an accuracy of ± 1 deg.

A-1.2.3 *Wire Net Basket* — capable of holding tableware upright and of such a size as could easily transfer tableware from hot to cold water-bath.

A-2. PROCEDURE

A-2.1 For Flat Tableware

A-2.1.1 Heat the air-oven and adjust the temperature to within $67^{\circ} \pm 1^{\circ}\text{C}$. Quickly place the requisite number of samples in it and maintain the temperature for 30 minutes. Remove the samples one at a time by means of tongs with asbestos-covered tips and subject the outside of the ware to a spray of cold water at $27^{\circ} \pm 1^{\circ}\text{C}$, for a period of one minute, within 5 ± 1 seconds of taking out of the oven. The inside of the fiat tableware shall not be wetted.

A-2.2 For Tableware Other than Flatware

A-2.2.1 Place the requisite number of samples into the wire net basket in an upright position. Fill the baths with water and adjust the temperatures of hot and cold baths at $67^{\circ} \pm 1^{\circ}\text{C}$ and $27^{\circ} \pm 1^{\circ}\text{C}$ respectively. Immerse the basket containing samples into the hot water-bath so that they are filled with water. Allow to soak for 15 minutes at the temperature of $67^{\circ} \pm 1^{\circ}\text{C}$.

A-2.2.2 Transfer the basket containing samples filled with hot water to the cold water-bath. The process of transference shall be completed within 10 ± 2 seconds. Immerse the samples completely in the cold water-bath for a period of 2 minutes, without allowing cold water to enter them.

A-2.3 Samples shall be taken as having satisfied the requirements of the test if they do not crack or break.

NOTE — Samples which have not broken shall not be subjected to other tests or use.

APPENDIX B*(Clause 5.1)***SAMPLING OF GLASS TABLEWARE****B-1. SCALE OF SAMPLING**

B-1.1 Lot — In a single consignment all the glass tableware of identical description or use, produced under relatively similar conditions of manufacture (such as melt of glass, production batch, production line, production shift) shall be grouped together to constitute a lot.

B-1.2 Sample shall be selected and examined for each lot separately to ascertain conformity of the lot to the requirements of this specification. The number of sample tableware to be selected from a lot shall be in accordance with Table 1. Depending upon the lot size, the first sample of size given in col 2 of Table 1 shall be selected at random. The second sample will be taken if required in **B-2.1 (c)**.

TABLE 1 SAMPLE SIZE AND CONFORMITY CRITERIA

LOT SIZE	SAMPLE	SAMPLE SIZE	CUMU- LATIVE SAMPLE SIZE	ACCEPT- ANCE NUMBER	REJEC- TION NUMBER	SUB-SAMPLE FOR THERMAL SHOCK TEST
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Up to 100	First	8	8	0	2	5
	Second	8	16	1	2	
101 „ 300	First	13	13	0	3	5
	Second	13	26	3	4	
301 „ 1 000	First	20	20	1	4	5
	Second	20	40	4	5	
1 001 „ 3 000	First	32	32	2	5	8
	Second	32	64	6	7	
3 001 and above	First	50	50	3	7	8
	Second	50	100	8	9	

B-1.3 The sample tableware shall be selected at random from the lot. For tableware packed in different boxes, a number of boxes (about 10 percent subject to a minimum of 2) shall be chosen at random. From each of the boxes so chosen approximately equal number of tableware shall be taken at random to make up the required sample size.

B-1.4 In order to ensure randomness of selection, use shall be made of random number tables. In case, random number tables are not available, the procedure given below may be adopted:

Starting from any tableware in the lot, count them in one order as 1, 2, 3, ..., up to r and so on where r is the integral part of

N/n (N and n being the lot size and the sample size respectively). Every r th tableware thus counted shall be withdrawn as a sample tableware.

B-2. NUMBER OF TESTS AND CRITERIA FOR CONFORMITY

B-2.1 Requirements Other than 3.4 and 3.5 — The tableware in the first sample shall be inspected for all requirements except thermal shock and alkalinity (*see 3.4 and 3.5*) and any tableware which fails in any one or more of the requirements shall be regarded as a defective. The number of defectives in the first sample shall lead to one of the following steps:

- a) If the number of defectives in the first sample is less than or equal to corresponding acceptance number, the lot shall be considered as satisfying these requirements and shall be further tested for thermal shock and alkalinity.
- b) If the number of defectives in the first sample is greater than or equal to the corresponding rejection number, the lot shall be rejected without further testing.
- c) If the number of defectives in the first sample is between the corresponding acceptance number and rejection number, the second sample shall be taken from the lot. The second sample shall also be inspected for these requirements. If the sum of defectives of the first and second samples is less than or equal to the corresponding acceptance number, the lot shall be accepted as satisfying these requirements and shall be tested further for thermal shock and alkalinity. If the sum of defectives is greater than or equal to the corresponding rejection number, the lot shall be rejected without further testing.

B-2.2 Thermal Shock Test — The lot which has been declared satisfactory in **B-2.1** shall be subjected to the thermal shock test. The number of samples to be tested for thermal shock shall be in accordance with col 7 of Table 1 and shall be taken from the tableware already inspected and found satisfactory in **B-2.1**. The lot shall be declared as satisfying the thermal shock test and passed on for alkalinity test, if all the tableware tested pass the test.

B-2.3 The lot which has been declared satisfactory in **B-2.1** and **B-2.2** shall be tested for alkalinity. This test shall be performed in duplicate by taking the tableware at random from those already selected or directly from the lot if necessary. The lot shall be declared as satisfying the alkalinity test if both the tests satisfy the requirements.

B-2.4 The lot shall be declared to be in conformity with the requirements of this specification if it has been found satisfactory in **B-2.1**, **B-2.2** and **B-2.3**.

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